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E. F. NOELL

2,230,870

LAYOUT OR KEY SHEET REGISTERING DEVICE

Filed July 27, 1939

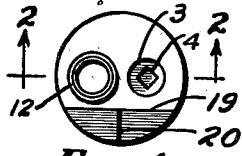


FIG. 1.

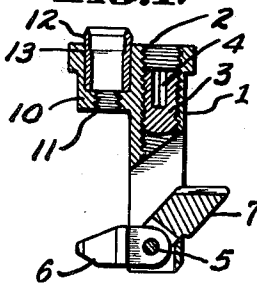


FIG. 2.

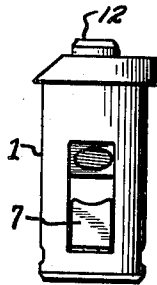


FIG. 3.

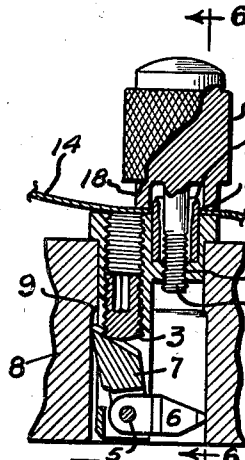


FIG. 5.

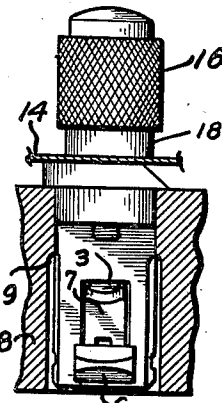


FIG. 6.

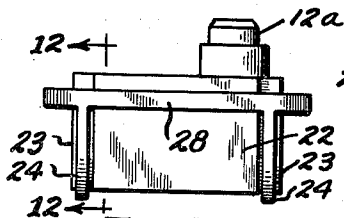


FIG. 7.

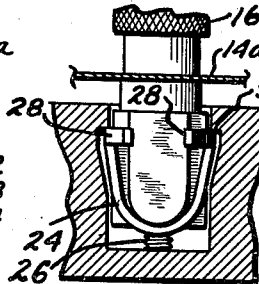


FIG. 11.

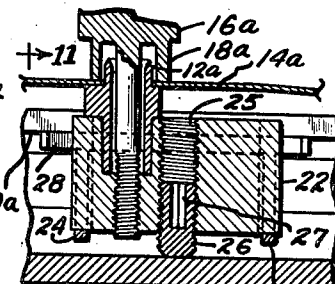


FIG. 10.

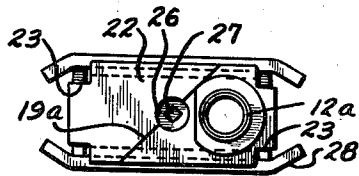


FIG. 8.

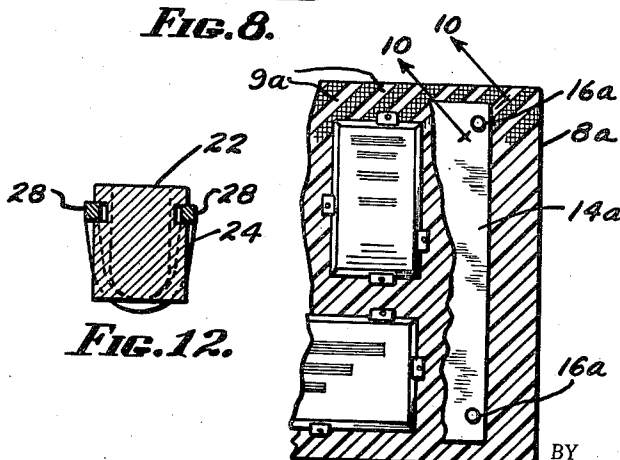


FIG. 9.

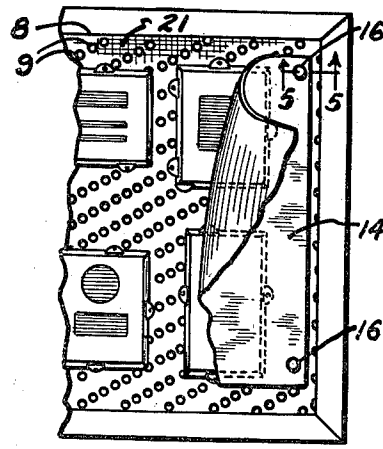


FIG. 4.

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2,230,870

LAYOUT OR KEY SHEET REGISTERING
DEVICEElmer F. Noell, Cincinnati, Ohio, assignor to The
Printing Machinery Company, Cincinnati,
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Application July 27, 1939, Serial No. 236,849

10 Claims. (Cl. 101-408)

My invention relates to layout or key sheet registering devices and particularly to registering devices for registering make up sheets for printing work.

6 In preparing forms for printing, it has been customary to register certain plates with respect to a transparent layout or key sheet, which is then printed, then to register other printing plates, where multicolor printing is done, by positioning the transparent layout sheet as accurately as has been possible and by the use of rulers and other instruments, and then positioning the plates for the successive printings with respect to the printed areas on the layout sheet.

15 If in the positioning of the make up sheet there is any inaccuracy the plates for the successive printings will not be in exact registry.

20 It is the object of my invention to provide means by which the position of printing plates may be predetermined by the accurate positioning of layout sheets.

25 It is a further object of my invention to provide a registering device which will greatly facilitate, and thus reduce labor and expense, in positioning printing plates on either a cylindrical or flat bed foundation.

30 It should be understood that typographic printing from plates is carried out either with cylinders which carry the printing plates or with flat bed foundations. The supports for the plates are ordinarily plate registering devices having jaws which engage the side edges of the printing plates. The cylinders or flat bed foundation are provided with either grooves or a series of spaced holes within which the registering devices or hooks, as they are often called, may be held. The registering devices are ordinarily clamped in position by means of a key which is inserted down through the body of the device and by which the position of the device is determined both as to its orientation and alignment.

40 It is an object of my invention to utilize the grooves or holes in the bases or cylinders to accurately register layout or key sheets, so that after an initial positioning has been made the sheet may be removed, the regular printing proceeded with, and then so that the sheet may be re-positioned on the base or cylinder in exactly the same position as it originally occupied when the original setting of the plates for the first run was made.

50 The foregoing object and other objects to which reference will be made in the ensuing disclosure, I accomplish by that certain combination and

arrangement of parts of which I have shown a preferred embodiment.

In the drawing:

Figure 1 is a plan view of a preferred type of sheet registering device for a perforated foundation plate.

Fig. 2 is a sectional view of the device shown in Fig. 1, taken along the lines 2-2.

Fig. 3 is a side elevation view of the device shown in Figs. 1 and 2.

Fig. 4 shows a plan view of a flat bed perforated base showing the use of devices like that shown in Figs. 1 to 3.

Fig. 5 is an enlarged sectional view along the lines 5-5 in Fig. 4.

Fig. 6 is a sectional view along the lines 6-6 in Fig. 5.

Fig. 7 is a side elevation of a sheet registering device for use with a grooved foundation base.

Fig. 8 is a plan view of the device shown in Fig. 7.

Fig. 9 is a plan view of a grooved foundation base showing the device of Figs. 7 and 8 in use.

Fig. 10 is a sectional view along the lines 10-10 of Fig. 9.

Fig. 11 is a sectional view along the lines 11 in Fig. 10.

Fig. 12 is a sectional view along the lines 12-12 of Fig. 7.

Referring to the modification of the invention in Figs. 1 to 6 a body 1, internally threaded as indicated at 2, for receiving the screw 3 which has a squared opening 4, by means of which the screw may be rotated with a wing type key having a squared bit conforming to the shape of the square opening 4.

Mounted in the body 1, on a pin 5, I have shown a bottom latch 6 and back latch 7.

Upon rotating the screw 3, as illustrated in Fig. 5, the tip of the back latch 7 is wedged against the side wall of the honeycomb opening within the foundation base generally indicated at 8.

It should be understood that the device illustrated in the drawings, Figs. 1 to 6, is for use with what is technically known in the trade as a honeycomb base. Such a base is provided with a series of cylindrical openings. The openings are of a lesser diameter toward the top surface of the foundation base than towards the bottom surface so that an annular shoulder 9 is ordinarily provided against which the tip of the back latch 7 abuts in certain positions of adjustment.

Extending from the body 1 of the device, there

is a boss 10 provided with a threaded opening 11. An annular cutter head 12 is countersunk within an opening 13 in the boss 10, the inner wall of the cutter head being sufficiently thin so as not to interfere with the insertion of a threaded screw into the threads 11.

In Figs. 5 and 6 there is shown layout or key sheet 14 secured in position in a perforation 15 caused by contact with the cutter head 12. The layout or key sheet is positioned with respect to the foundation base and a thumb nut 16 having a threaded stud shaft 17 is screwed into the threaded opening 11 in the boss 10. An annular shoulder 18 presses the area surrounding the perforation in the layout or key sheet into contact with the cutter head.

It will be observed that the upper surface of the device illustrated in Fig. 1 is provided with indicia lines 19, 20.

The foundation base 8 illustrated in plan view in Fig. 4, is provided with cross lines 21, which make it possible to accurately position the device after it has once been removed, and is being reinserted in order to accurately determine the position of the layout or key sheet.

By means of the indicia lines 19 and 20 in the upper surface of the device the device itself can always be adjusted to substantially an exact position, in which position the perforated openings in the layout or key sheet can be registered with the cutter head, and the sheet held in fixed position by turning down the thumb nut 16.

In Fig. 4 there is shown a layout or key sheet 14 held in position by the two devices of which the thumb nuts 16 are shown in opposite corners.

Since the body 1 of the device is rotatable, and since the boss 10 extends out from the side wall of the body the axis of the threaded opening 11 is of course, eccentric to the axis of the threaded opening 2, so if it were not possible to accurately determine the direction in which the boss 10 extends, the operator could never be sure that the registering device was put back in the same position which it had originally occupied. It is for this reason that the indicia lines 19 and 20 which may be set with respect to the lines 21 in the foundation base, is of considerable importance.

In Figs. 7 to 12, the same type of cutter head 12a is used, and the make up sheet 14a is held in position by means of a knurled nut 16a.

The diagonal block 8a illustrated in Fig. 9, instead of being provided with honeycomb holes, is provided with grooves, which grooves as indicated at 9a, are provided with shoulders within which the devices for positioning the layout or key sheet may be positioned.

Referring to Fig. 7, the device carrying the cutter heads 12a have bodies 22, having recessed portions 23 at the ends thereof within which are seated springs 24, which springs assist in the positioning of the device in the grooved plates.

The bodies 22 are provided with threaded openings 25, within which are seated screws 26, having squared openings 27, for receiving the squared bit of a wing key. When the screws 26 are turned down, the springs 24 have upper portions 28 which interlock underneath the ledges 9a in the diagonal grooves of the foundation base. The upper surface of the devices illustrated in Figs. 7 to 12, have indicia lines 19a, which may be used in a similar manner to the indicia lines 19 in the devices for use with

the honeycomb base to accurately position the cutter heads within the grooves.

In Fig. 9 there is shown a layout or key sheet 14a positioned by means of the knurled heads 16a, holding the sheet down against the foundation base. The knurled headed nuts 16a have an annular shoulder 18a which bears against the upper surface of the sheet.

It will be obvious that the devices which I employ for holding the cutter heads in position are similar to what are known in the art as printers registering hooks. These are of two types, the drop in hook, such as is similar to the devices shown in Figs. 1 to 6, and the diagonal hook, such as is shown in the devices illustrated in Figs. 7 to 12.

The novelty of the devices which I propose to employ lies not in the manner in which the devices are positioned either within a honeycomb base, or a diagonally grooved base, but in the use of the cutter head and the knurled nuts 16 with annular shoulders 18 by means of which the layout or key sheets may be accurately positioned during the arrangement of the printing plates on the foundation bases for one or multi-color printing. Since the device is used either with a foundation base or plate cylinder in the claims which follow, I have used the word base as indicating either type of support for the printing plates.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A layout or key sheet registering device provided with a body having means for clamping said body in position on the bed of a printing machine, said device being provided with a neck sharpened so as to perforate a layout or sheet brought into contact therewith.

2. A layout or key sheet registering device provided with a body having means for clamping said body in position on the base of a printing machine, said device being provided with a neck sharpened so as to perforate a layout or key sheet brought into contact therewith, said body having an upper surfaced portion provided with gauge means to insure proper orientation and alignment of said device on said printing machine base.

3. A layout or key sheet registering device provided with a body having means for clamping said body in position on the base of a printing machine, said device being provided with a neck sharpened so as to perforate a layout or key sheet brought into contact therewith, and a sheet clamping knob provided with means for engaging said device.

4. A layout or key sheet registering device provided with a body having means for clamping said body in position on the base of a printing machine, said device being provided with a neck sharpened so as to perforate a sheet brought into contact therewith, said neck having an interiorly threaded portion and a knob threaded to engage said interiorly threaded portion.

5. A layout or key sheet registering device having a body provided with means for clamping same in a perforation in the base or plate cylinder of a printing press, a neck on said body sharpened so as to perforate a sheet, and means for clamping a sheet adjacent said sharpened neck.

6. A layout or key sheet registering device having a body provided with means for clamping same in a perforation in the base of a print-

ing press, a neck on said body sharpened so as to perforate a sheet, and means for clamping a sheet adjacent said sharpened neck, said body being provided with gauging means for assisting in the accurate positioning of said device on said perforated base.

7. A layout or key sheet registering device having a body provided with means for clamping same in a groove in the base of a printing press, a neck on said body sharpened so as to perforate a sheet and means for clamping a sheet adjacent said sharpened neck.

8. A layout or key sheet registering device having a body provided with means for clamping same in a groove in the base of a printing press, a neck on said body sharpened so as to perforate a sheet and means for clamping a sheet adjacent said sharpened neck, said body being provided

with gauging means for assisting in accurately positioning said device on said grooved base.

9. A layout or key sheet registering device having a body provided with means for clamping same in a printing machine base, a neck on said body sharpened so as to perforate a sheet and means for clamping a sheet adjacent said sharpened neck.

10. A layout or key sheet registering device having a body provided with means for clamping same in a printing machine base, a neck on said body sharpened so as to perforate a sheet and means for clamping a sheet adjacent said sharpened neck, and gauging means associated with said body for assisting in accurately positioning said device in said base.

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